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ABSTRACT

A teacher in gifted education implemented and evaluated a 9-week practicum intervention designed to: (1) produce computer literacy materials that would enable fourth and fifth graders to meet minimal standards for computer literacy in Florida; and (2) produce corresponding in-service materials for teachers. A teacher's manual was developed from county materials and other public domain materials on computer instruction. The manual correlated materials and activities to minimal standards, and organized them in a logical, teachable progression. A student's booklet was compiled from the activities and materials in the teacher's manual. Included were activity sheets; cut-and-paste pages; and informative pages on terms, procedures, and facts. Two 45-minute in-service sessions were conducted with participating teachers. After teachers had mastered the minimal standards, the program was implemented in classrooms. Target teachers were asked to teach the computer literacy program at least twice a week for 30 minutes per lesson. Evaluation data revealed that 55 of 181 target students achieved a posttest score of 80 percent or better. Teachers improved significantly in knowledge of computers. Measures and instruments are appended. (RH)

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ACHIEVING STUDENT MASTERY LEARNING OF FIFTH GRADE MINIMAL STANDARDS FOR COMPUTER LITERACY THROUGH THE DEVELOPMENT AND USE OF A COMPUTER LITERACY PROGRAM

by

CHERYL TEMPLE DAFELDECKER

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submitted to the Faculty of the Center for the Advancement of Education at Nova University in partial fulfillment of the requirements for the degree of Master of Science.

The abstract of this report may be placed in the School Practices Information Files for reference.

June/1987

Running Head: COMPUTER LITERACY

Authorship Statement

I hereby testify that this paper and its report are my own. When it has been necessary to draw from other published or unpublished sources, I have acknowledged them accordingly and editorially.

I give this testimony freely out of respect for other works in the field, and in hopes that my own work presented here will earn similar respect.

Cheryl Temple Dafeldecker

Cheryl Temple Dafeldecker
June 1987

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Chapter 1

Purpose

The practicum was set in a west-central Florida elementary school, with a population of 630 K-5 students, of which 344 are white, 215 are black, 49 are Hispanic, 10 Asian, and 6 Indian. The majority of students live within walking distance of the campus, and 196 students are bussed from satellite attendance areas. 295 students at the school receive free lunches under the Federal free lunch program, and 71 are on the reduced-price meal scale.

Class sizes are based on district-mandated student-teacher ratios, Kindergarten, 28:1, Primary (1-3), 25:1, and Intermediate (4-5), 29:1. The school includes 3 Kindergarten classes (with full-time aides), 5 first grade units, four second grades, four third grade units, three fourth grades, three fifth grade units, one combination fourth/fifth grade class (LIFT), 1.5 Specific Learning Disabled units, one Emotionally Handicapped unit, one Gifted Education unit, one half-time Speech unit, one full-time ECIA Chapter 1 Reading unit (and three in-class aides), one media specialist (operating an "open" media center), one guidance counselor, one Music unit, one Physical Education unit, one half-time Primary Specialist, one full-time Prep aide, two Headstart units (with aides), one Curriculum Intervention Specialist, and a Principal.

The school is of close proximity to a state university,

and as such receives pre-interns and interns from the university's teacher education program virtually every semester. After school care is provided at the school site by a YMCA-sponsored "Latchkey" program, servicing 35 students. The school population is generally considered to be of middle to low socio-economic status.

The practicum in particular involved 204 students in seven classes for grades four and five, 95 in fourth, and 109 in fifth. The study involved only fourth and fifth grade students and teachers because the problem involved the teaching of computer literacy state standards and objectives for fifth grade. The sample population included 111 male and 93 female students, and 3 male and 4 female teachers. 57 percent of the teachers had no formal training in computer use or teaching computer instruction, and the remaining 43 percent had limited to extensive hands-on computer training, but limited to no instruction in teaching computer usage, prior to the practicum implementation.

The practicum researcher is the of teacher of Gifted Education, servicing 12 students in grades three (1 student), four (6 students), and five (5 students). The county-adopted Gifted Education curriculum includes instruction in Mathematics, Science, Computer Literacy and Programming, and Health.

As part of the Gifted Education curriculum, the students and teacher have immediate access to at least two computers and instructional and curricular guides and materials for

computer instruction for academically gifted students. At this particular school, classroom teachers had to share access to eight computers, and were limited to one county-generated compilation of computer materials and activities, one copy per each grade level.

The state of Florida mandated that Florida school systems teach and test students in the subject area of computer literacy. The problem addressed by this practicum was that the classroom teacher was not teaching the state compendium of objectives, nor were the teachers prepared to teach those objectives.

Responses from a survey/questionnaire (see Appendix A) substantiated that teachers were not teaching the state standards for computer literacy. Not only were the objectives not being taught, teachers had little or no experience with computers themselves.

The survey revealed many major points of concern, the first being that out of seven fourth and fifth grade teachers at this school, only two said they were including computer instruction in their regular teaching. Four out of the seven teachers had no training in the area of computer education in the last five years.

Three of the seven had access to a computer in their classroom. Five of the seven teachers said they did not include computer curriculum in their lesson planning (a requirement by the county redefined day). Reasons cited included lack of computer access, and lack of structured

curricular materials (they did not feel familiar enough with the subject matter to feel qualified to make sound judgements of materials from outside sources). Also mentioned were lack of understanding, experience and training in the area of Computer Education, and frustration from all of the reasons combined. The teachers did not consider themselves computer literate, and were, as such, uncomfortable, or even fearful of, teaching computer literacy.

The most common answer to the question of why computer literacy was not being included in lesson plans and taught, was that the teachers did "not have the resources or the training."

In essence, the problem was that:

1) Students are required to meet the Florida State Minimal Standards for Computer Literacy.

2) Teachers should teach the State Minimal Standards in a logical order, incorporating hands-on activities for the students with experience-based knowledge from the teacher, thus insuring mastery for the students and meeting state and county requirements and guidelines.

3) Teachers at this school were not incorporating the State Minimal Standards in their plans, and were not teaching the Minimal Standards.

4) The practicum researcher's plan was to compile and/or design, and implement, a student curriculum program and a corresponding teacher in-service component providing teachers with the necessary background, materials, and logically

sequenced activities correlated to the the Minimal Standards, to successfully teach the State Minimal Standards for Computer Literacy, Grade Five.

Over a period of nine weeks of teacher-directed classroom instruction, 85 percent of the target students would exhibit mastery of the tested Florida Minimal Standard objectives (noted by the letters FL after the objective as listed below), and additional objectives relating directly to the implementation of the structured Computer Literacy Program (CLP), as measured by a raw score of 80 percent or better on an objective-based post-test.

Through implementation of the Computer Literacy Program, the student would:

1. execute a program by selecting from a menu of programs (FL);

2. indicate proper techniques for care and user responsibility for operating a computer system with peripheral hardware (FL);

3. identify that error messages indicate that there is a problem (FL);

4. identify the purpose of the following devices: keyboard, CRT display (monitor/TV), tape/disk units, and printer (FL);

5. identify these functions of a computer system: input device, output device, internal memory, and central processing unit (FL);

6. identify a computer program as a sequence of

instructions used by the computer to perform a task (FL);

7. identify that computer programs are written in computer languages to solve problems (FL);

8. identify the fact that software refers to computer programs (FL);

9. identify the fact that software must be compatible with the equipment to be used (FL);

10. identify an example of a computer application in each of the following areas: home; school; and business (FL);

11. identify the fact that laws affect the use, access, and distribution of electronic information (FL);

12. identify the problem to be solved in a given programming situation (FL);

13. predict the outcome of a logical sequence of instructions with no decision-making points (FL);

14. become aware of computer usage and terminology;

15. experience "hands-on" usage with micro-computers in the classroom setting; and

16. become proficient in the Minimal Skills set by the State of Florida for Grade Five Computer Literacy as evidenced by 85 percent or better of the target students scoring at least 80 percent on a county-generated objective-based post-test.

Also, after completion of the Computer Literacy Program, the students would:

17. become more aware of the future capabilities that

micro-computers hold in our society; and

18. be motivated to use computers in present and future school and personal applications as evidenced by their future career choices and opportunities.

Chapter 2

Research and Solution Strategy

Computer Literacy, in itself, is still a nebulous term. Experts cannot agree on a single definition. There are many overlaps in definition attempts, but there is tremendous variance in opinion on how much programming knowledge is necessary to be computer literate.

Watt (1982) believes that Computer Literacy goes beyond its common definition as a body of information about computers, how they work, how they are used, and their impact on society. He says that Computer Literacy is that of a "cultural phenomenon" that includes the full range of skills, knowledge, understanding, values, and relationships of a computer-based society.

A computer is a device that enhances one's ability to live and cope with the modern world, according to Scher (1984). He defines Computer Literacy as familiarity with that device, giving people the ability to manipulate computer technology. He states that to be computer literate does not require posessing sophisticated programming knowledge. Luehrmann (1984), on the other hand, states that to be computer literate, a person must be able to tell the computer what they want it to do. If a person cannot do that, they must rely on others to "communicate their needs" to the computer.

The State of Florida apparently agreed to some extent,

because according to Lenkway (1986) and the Florida State Department of Education, in Florida, learning about computers is now considered a basic skill, but programming, per se, is not included in the Minimal Standards. "Understanding the process of programming" is included, however.

The Accountability Act of 1976 established Minimum Student Performance Standards in Mathematics, Reading, and Writing. The Florida Legislature, in passing the Educational Reform Act of 1983, expanded the Accountability Act of 1976 to include Science and Computer Literacy. Lenkway (1986), as Computer Education Consultant to the Florida State Department of Education, is naturally supportive of the new Standards, but he does state, "There remain unresolved issues dealing with the implementation of this program." He cited issues of teacher training, responsibility for teaching the minimal skills, and acquisition of necessary hardware and software as problems to be addressed.

All three of Mr. Lenkway's concerns were present at the practicum site. Survey results showed that the staff was not trained, the responsibility was being shrugged, and the hardware/software was sparse. The problem existed, and the practicum observer formulated four strategies to address the problem.

1. Administration would inform teachers that the Standards are to be taught, and that each individual teacher is responsible for locating materials and resources for their own classroom instruction.

2. Outside resource personnel would be hired or brought in on a consulting basis to train teachers and produce a programmed curriculum for Computer Literacy.

3. The school would employ a computer teacher, preferably degreed in computer education, responsible for teaching Computer Literacy to the entire school. The computer teacher would work in a separate classroom (lab setting) with proper and appropriate supplies and equipment, including hardware and software.

4. A Computer Literacy Program would be compiled and organized, much from already existing county-generated and/or public domain materials, to include teacher's manuals and student activity workbooks, correlated to the Minimal Standards, and structured in a logical teaching sequence. Review skills and fun activities would be integral to the program's design, and teacher in-service components would center on the same Minimal Skills for teachers, plus a small amount of background and extension to make the teachers more comfortable.

The practicum observer determined strategy number 4 to be the most practical. Strategy number 1 was discounted as no real solution, but instead an authoritarian power-play. Teachers would get no help in that situation, and would most likely turn further away from accepting computers than they already were.

Budgeting was a serious problem for strategy number 2. Hiring outside personnel is probably outside a school's

budget, and usually outside its authority as well.

Examining strategy number 3, the manpower and necessary materials budgeting, space considerations, and class schedule creation would have been difficult to provide at the particular practicum site school. The site had no space available for a separate classroom (lab setting) as described in strategy 3, and to schedule all classes in all grade levels into the lab for the required allotted times, especially in a mid-year program addition, would be a gargantuan task. The school would also have been hard pressed to provide a degreed computer teacher (no staff faculty member had this certification), so new personnel would need to have been hired.

Upon consideration of the four strategy suggestions, the most feasible choice was obviously to compile and organize, and train teachers with, a Computer Literacy Program (CLP). There were no manpower changes involved, no extraordinary expenditures for new equipment, and no space problems. Cost involved the actual printing of teacher's materials and student booklets, which was done at the school. Other considerations were allotment of computers to involved classrooms and teacher time for in-service (after the student day, but before teacher dismissal), both of which were coordinated through the building principal.

Preparation and compilation of the CLP, gathering materials and activities, structuring and presenting in-service of teachers, projecting time-lines, and designing

surveys, pre- and post-tests, and mid- and post- evaluations were time-consuming activities that the practicum researcher accomplished prior to implementation.

Research by Coleman (1976) showed that implementation of new projects is more likely to occur if presented by local staff. Coleman also found that experimental learning and learning practices are more likely to be used after training. Having the in-service and Program resource person on staff helped to streamline problem solving that became necessary.

Overwhelming positives were present for the compilation of a Computer Literacy Program. The first one being the cost factor, as school-based duplication of materials would only involve the cost of paper. There was no need to order, purchase, or wait for commercially prepared packets.

Secondly, re-assigning the school's available computers to fourth and fifth grade classrooms entailed no real cost, just custodial time, a little schedule shifting, and some diplomatic statements.

Thirdly, computer instruction at the fourth and fifth grade levels was consistent, according to the Program, and in compliance with County re-defined day time allotments, with scheduled computer instruction and materials.

Lawton and Gerschner (1982) pointed out that obstacles to Computer Literacy included student and teacher attitudes and anxieties, diverse computer software and program systems, inconsistent terminology, and different instructional methodologies. Lawton and Gerschner also stated that ways to

expand Computer Literacy include staff development programs, better planning, and attention to teachers' sensitivities. The CLP addressed most all of Lawton and Gerschner's observations.

Other considerations deserving of the practicum researcher's attention were those factors that could present problems in the implementation of the Program. The researcher considered all factors in order to have a successful implementation, but factors that had an adverse effect on the Program included:

1. Un-cooperative teachers;
2. Classes not adhering to time-line; and
3. Daily unpredictable breaks from routine such as assemblies, class pictures, field trips, field days, guest speakers, and make-up days.

The first factor, labeled as "uncooperative teachers", at the beginning was not a problem, through the survey/questionnaire, pre-test, training, and mid-evaluation all six teachers were supportive and very cooperative. By the end of the implementation time period, all but one teacher completed the entire program. Despite the closing of school, special programs, and daily unpredictable breaks from routine, only one teacher was unable to complete the program, even with the support of the practicum researcher and with additional guidance from the practicum observer, the principal of the school. The post-test scores from that particular class were unobtainable. Five of the six target

teachers and classes were able to adhere to the suggested timeline.

Recognition of the three stated factors did help the practicum researcher prepare for possibilities, and make remedies and problem solving easier throughout the implementation.

Chapter 3

Method

The Computer Literacy Program implementation was done in steps as follows:

1. A teacher survey/questionnaire was designed and administered to the target group of teachers to document the need for a Computer Literacy Program. (See Appendix A.) Through the survey, the researcher determined the level of formal computer instruction the target teachers had experienced, the state of computer instruction at the targeted grade levels in the school, and determined that there was a difference between what was occurring at the school, and what should have been occurring at the school by County and State guidelines.

2. A pre-test (see Appendix D) was administered to the target teachers to determine the level of instructional knowledge present, according to the Minimal Standards for Computer Literacy.

3. The researcher, upon concluding that there was a need for a Computer Literacy Program, gathered materials and activities from existing County-generated, and other, public-domain computer instructional material sources, designed activities where needed, and compiled a teacher manual. The manual correlated all materials and activities to their corresponding Minimal Standards, and organized them into a logical, teachable progression, including

pre-requisite skills and review skills where needed.

4. A student booklet was compiled from the activities and materials in the teacher's manual, including reproduced activity sheets, cut 'n' pastes, and informational pages of terms, procedures, or fun facts. This was designed to help each student by allowing them their own resource/activity book, and putting less burden on the teacher to reproduce and keep track of materials.

5. Two forty-five minute in-service sessions were conducted with the target teachers. The in-service directed them on how to use the Program and how to deal with minor technical problems with the computer, and presented and developed the knowledge necessary to have confidence in teaching the Minimal Standards, and in dealing with change in the computer curriculum.

6. Upon completion of the in-service, and mastery of the Minimal Standards by the target teachers, the CLP was implemented in the target classrooms for a nine-week period. Teachers began with the administration of a standardized format pre-test (see Appendix D) to students, and then followed the lessons and activities as delineated in the teacher's manual. Target teachers were asked to teach the CLP at least twice per week, for thirty minutes per lesson.

7. The practicum researcher was available to the target teachers as a resource person/troubleshooter/problem solver, and remained in contact with the target teachers weekly to monitor progress.

8. A formal mid-evaluation (see Appendix B) was administered to target teachers at four weeks into the program. The mid-evaluation included both a survey/questionnaire and a personal interview with the researcher. Results of the mid-evaluation were available to be used by the researcher to modify or correct any inconsistencies or questions. Alterations, tutoring, or extra practice was addressed, and an assessment was made as to the necessity of further in-service. (Assessment was negative.)

9. The practicum researcher continued in the role of monitor and problem solver, communicating at least weekly until the end of the nine-week implementation period.

10. At the completion of the nine-week period, target teachers were again administered the standardized format test (Appendix D) as a post-test. Target teachers were given a post-evaluation survey (see Appendix C) and interview.

11. The practicum researcher evaluated the data from student pre- and post-tests, and from target teacher evaluation surveys and interviews. The researcher, upon consideration of all data and information, reached a conclusion as to the success of the CLP as compared to the Outcome Objectives.

Chapter 4

Results

The practicum researcher evaluated the effectiveness of the Computer Literacy Program on both students and teachers.

The main objective of the Program was to achieve 85 percent student mastery of the State Minimal Standards objectives for Grade 5 Computer Literacy. The students were given a pre-test to establish a knowledge baseline for teachers to work with in their instruction. The same objective-based standardized format test was re-administered at the completion of the Program (see Appendix D). The test results were compared to the mastery criteria of a raw score of 80 percent or better, and interpreted to determine if the objective was met.

The final analysis showed that the expectation for the total test was unrealistic. The practicum researcher had expected 85 percent of the target population to score above 80 percent on the post-test. Actual results showed that 30.3 percent (55 of 181) of the target students achieved a percentage score of 80 percent or better on the post-test.

Although the results were not at all near those projected by the practicum researcher in percentage of total population achieving a desired score, that is not to say the CLP was not successful.

An item analysis comparison of both pre- and post-test results show defined improvement in the percentage of

students answering each respective item correctly. The practicum researcher considers these gains to be significant, ranging from 2 percent to 22 percent improvement on each of the twenty-five test items. (See Figure 1.)

The test used was a county-generated 25 item test, intended for county-wide use. It was designed to test the Fifth Grade State Minimal Standards for Computer Literacy, in preparation of and for practice before Fall State Assessment Testing begins. Since the test was created by the school district's Office for Computer Education, and since it was intended for widespread use, it was assumed by the practicum researcher to be valid and reliable.

The target teachers were pre- and post-tested, and the results, in a comparison, clearly indicate that after training and use of the CLP for the implementation period, all teachers had increased knowledge evidenced by higher post-test scores. Pre-test low score was 56 percent for teachers (high was 96 percent), while post-test low score was 92 percent, with a high of 100 percent. (See Figure 2.)

Program effectiveness for teachers was evaluated constantly throughout implementation. The initial survey/questionnaire was followed by a formal mid-evaluation and post-evaluation (also in survey form), and intermittent informal conferences and meetings were conducted as necessary. (See Appendices A, B, and C for copies of Surveys.) This on-going evaluation process enabled the practicum researcher to closely monitor Program progress, and

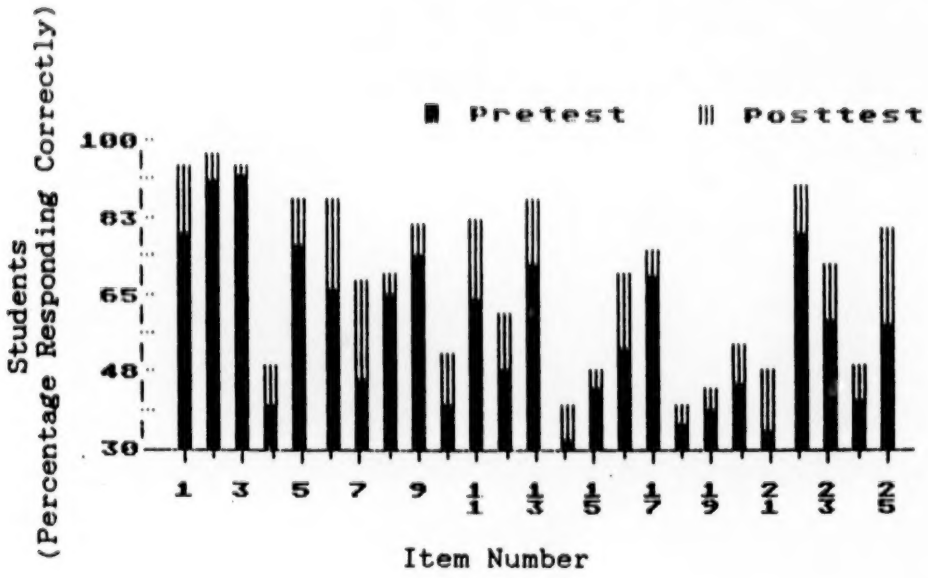

Figure 1. Percentage of improvement per item from student pre- and post-tests.

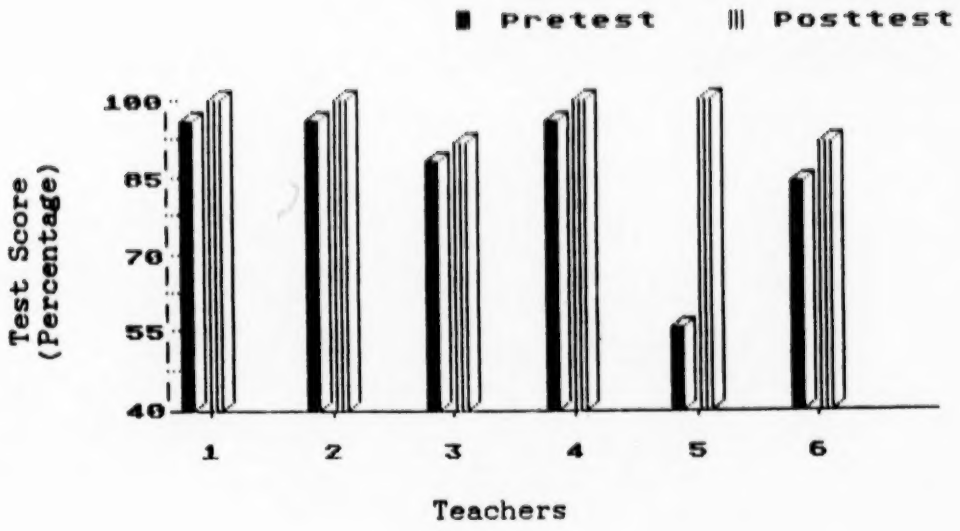

Figure 2. Pre-test/post-test score comparison for teachers.

permitted greater quality control, so any needed corrections/ additions/deletions could be made without delay.

Results of the Mid-evaluation were helpful and insightful to the practicum researcher. All the target teachers responded that the teacher's manual was complete and easy to follow, the overall program was clear and concise, and that they were teaching the CLP for the recommended thirty minutes per day, and at least twice per week. Two teachers stated they were even teaching computers three times per week, and all said they believed the CLP to be a beneficial program.

The Post-evaluation survey showed that the teachers were indeed satisfied with the program. The CLP was said to be useful and, importantly, considering the teachers' pre-Program attitudes, easy to use. The only area of concern was that of implementation time. Teachers believed that with a period of time greater than nine weeks, both students and teachers would have a greater opportunity to complete more activities, and get more hands-on time and experience with the computers themselves (considering the hardware "shortage" of one computer per classroom). The teachers were almost unanimous in their opinion that if more time was available, the student's post-test scores would have been significantly higher.

Chapter 5

Recommendations

After completion of the CLP Computer Literacy Program, there were substantial gains in students' and teachers' knowledge and usage of computers. In fact the program was successful, and several possibilities logically follow.

Fourth and fifth grade teachers could use the Program beginning in the Fall. Fourth grade students going to fifth will have had the full Program's experience and training in the previous year, and could use the Program as a tool to review, in preparation for the State Assessment Testing in October. These students would only need review and some hands-on reinforcement after a long summer to hopefully master the State Minimal Skills that will be tested in 1987-88.

Third grade students going to fourth grade will have experienced teachers and a developed and tested program to follow. They will then have a full year to work through the Program to attain mastery of the State Standards.

Since the CLP was effective, the program could, and should, be shared with other schools with similar problems in the area of Computer Literacy instruction. Informative and training inservices for the schools' Curriculum Intervention Specialists would provide each school with a Program resource person to oversee teacher training and Program implementation at each site. To this writing, the practicum researcher has

been invited to speak and present the CLP as a workshop for teachers in two of the local school district's Curriculum Specialist Small Group Meetings, and is scheduled to present a one-day Institute Workshop to 35 teachers of the school district's Fundamental Learning Classes (LIFT).

A natural progression could involve county-wide implementation of the CLP as the Computer Literacy preparatory curriculum in elementary schools. The practicum researcher has been approached by County Supervisors to investigate this possibility, including extension and reteaching components. Further extension would be the development of a third grade skills module (again, the practicum researcher has been approached on this subject), and periodic updating of activities and materials to reflect the rapidly growing and changing field involving computer technology.

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APPENDIX A

TEACHER'S PRE-SURVEY

SURVEY/QUESTIONNAIRE
COMPUTER LITERACY PROGRAM

1. Is there a computer in your classroom?

2. Have you had any formal training in the area of computer literacy?
   If so, what types of courses?

3. Are you aware of the computer literacy standards that the state of Florida has set for students in third, fifth, eighth, and tenth grade?

4. Do you have a copy of the Florida State Minimal Skills Standards for grade 5?

5. Are you aware of the redefined day set by the county, concerning computer education?

6. Do you teach computer skills as required by the county for the thrity minutes a day twice a week?

7. Are there sufficient materials available to you, as a classroom teacher, to teach computer literacy?

8. Are you willing to work with the staff on a computer literacy program?

9. Please rank order (1 most important to 4 least important) the items below according to how you perceive them to be used with a Computer Literacy Program..

Time in scheduling

Resource person available

In-service training

Computer access

10. How do you see Computer Literacy being taught in your classroom?

APPENDIX B

TEACHER'S MID-SURVEY

COMPUTER LITERACY PROGRAM
MID-EVALUTION

NAME_____(optional)

1. Was the pre-test completed by every student in your homeroom class?

   If no- Who did not take the pre-test?
   List students

2. Do you have enough student booklets?

3. Is your teacher edition complete?

4. Were the sample lesson plans helpful?

5. Are you teaching the CLP at least twice a week for 30 minutes?

   Or do you have a different schedule?

   If so what is it?

6. Are there any lessons that you have noticed to need more background information?

7. Is the over-all program clear and worthwhile?

8. Where are you at this point?
   Page_____

9. Do you see any problems with completion of program on April 13 ?

   POST-TEST SCHEDULED FOR APRIL 16TH

10. Are you enjoying the program?

11. Do your students enjoy the CLP?

General comments/suggestions:

APPENDIX C

TEACHER'S POST-SURVEY

COMPUTER LITERACY PROGRAM

POST-EVALUATION SURVEY

1. Were you able to teach computer skills as required by the county for the thirty minutes per day twice a week?

2. Were there sufficient materials available to you to complete the CLP?

3. In using the CLP for the nine week period, would you recommend continued use of the program?

4. When preparing lesson plans, were the lessons and activities easily read and helpful?

5. Do you feel that your students have a broader knowledge of Computer Literacy after completing the CLP?

6. When faced with the problem of planning a Computer Literacy Program for your classroom would a program similar to the CLP be beneficial to you?

7. Do you feel competent in the Florida State Minimal Skills Standards for Grade 5, after completing the CLP?

8. Using the scale below, what is the extent to which you feel proficient in Computer Literacy at this point? (circle one)

PROFICIENT SOMEWHAT PROFICIENT NON-PROFICIENT

9. Do you believe that the CLP was benefical to your students in understanding Computer Literacy? Did the CLP motivate and challenge your students?

10. Can you offer any suggestions, improvements or considerations for future use of the CLP?

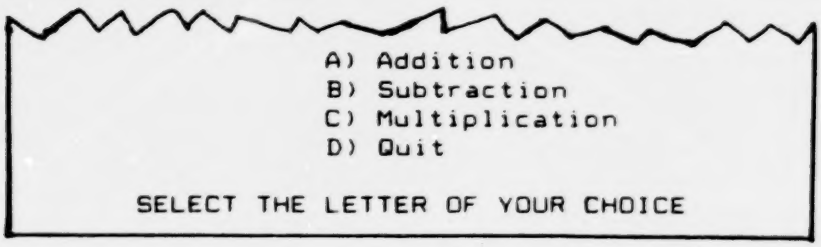
COMPUTER LITERACY MASTERY TEST

COMPUTER LITERACY ASSESSMENT
FIFTH GRADE

1. A computer menu is:

   A. a rule for the computer
   B. a selection of programs
   C. another kind of disk
   D. what you will eat

USE THE PICTURE OF THE COMPUTER SCREEN FOR THE NEXT TWO QUESTIONS.



2. Which key do you press to get a program that lets you subtract?

   A. B. C. D.

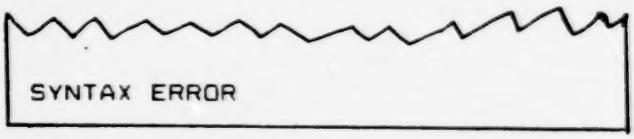
3. Which key do you press when you want to end the program?

   A. B. C. D.

4. Which of the following is important in the care of a disk drive?

   A. keeping paper clips out of it
   B. setting a drink on top of it
   C. putting paper in it
   D. letting it run overnight

5. The message on the screen means:



   A. The computer is broken.
   B. The program is complete.
   C. The program has a mistake.
   D. The next progam will begin.

6. Which of the following can be used for typing data into the computer?

   A. disk drive
   B. keyboard
   C. memory
   D. printer

7. Which of the following can display the output?

   A. a disk
   B. a joystick
   C. a keyboard
   D. a monitor

8. Which of the following can give a hard copy of a program?

   A. the disk drive
   B. the keyboard
   C. the monitor
   D. the printer

9. Which of the following can load a program?

   A. a monitor
   B. a mouse
   C. a printer
   D. a tape/disk drive

10. What is one of the four major functions of a computer system?

   A. listening
   B. printing
   C. processing
   D. typing

11. Information put into the computer is:

   A. input
   B. insert
   C. output
   D. storage

12. The results of a program run by the computer is:

   A. input
   B. output
   C. monitor
   D. storage

13. When information is kept in the memory of the computer this is:

    A. error
    B. menu
    C. output
    D. storage

14. Which of the following is an example of a computer program that will run correctly?

    A. 10 PRINT NAME
    B. PRINT NAME
       END
    C. 10 PRINT "5 + 3"
       20 END
    D. RUN

15. What is a computer program?

    A. A device used to input and store BASIC programs.
    B. A set of instructions used to tell the computer what to do.
    C. A set of equipment used to print programs.
    D. A set of directions used to solve problems.

16. A computer only understands programs written in _____.

    A. BASIC
    B. ENGLISH
    C. FRENCH
    D. RUSSIAN

17. A computer only understands programs written in _____.

    A. dots
    B. pictures
    C. computer languages
    D. verbal languages

18. Software is another name for _____.

    A. computer language
    B. computer programs
    C. disk drives
    D. printer output

19. Disk and tapes store data in the form of _____.

A. CPU
B. hardcopy
C. monitor
D. software

20. Maria would like to look at graphics on the computer. The software she chooses for the computer system must be:

A. expensive
B. compatible with the system
C. copyrighted for the system
D. stored outside the system

21. There are laws about _____.

A. copying copyrighted software
B. playing computer games
C. copying public domain software
D. writing computer software

22. There are laws about _____.

A. stealing computer information
B. the type of computer system you can own
C. the price of computer systems
D. using your friends computer

23. Select a way a computer is used at home.

A. for cleaning the house
B. for developing pictures
C. for mailing bills to companies
D. for writing letters

24. Select a way a computer is used in a business.

A. for developing new ideas
B. for organizing names by zip code
C. for playing a piece of music
D. for teaching programming

25. You only have a computer, a monitor and a disk drive. You have written a short story, using a word processing program. You use the print command to tell the computer to print a copy of your story on paper. Nothing happens. Choose the answer that list the problem.

A. Your story is too long.
B. You have misspelled some words.
C. You do not have a printer.
D. Your story cannot be printed.